DNR Form 542-1379

IOWA DEPARTMENT OF NATURAL RESOURCES NPDES PERMIT APPLICATION FORM 4 FOR INDUSTRIAL FACILITIES

FORM 4 - FACILITIES WHICH DISCHARGE PROCESS WASTEWATER – NEW SOURCES

1. Sources of Pollution
For each outfall, provide a description of:
(1) all operations contributing wastewater to the discharge including process wastewater, cooling water, storm water, etc.,
(2) the monthly average and daily maximum flow contributed by each operation,
(3) the frequency and duration of the discharge from each operation except storm water,
4) the stream that receives the discharge.

Outfall No.	Operation	Flow Rate		Frequency		Duration
		avg	max	days/week	months/year	(in days)
Receiving Stream Name:						
Receiving Stream Name:						
Receiving Stream Name:						
Receiving Stream Name:						

Facility Name:	

2. Production

If there is an applicable production-based effluent guideline or new source performance standard, for each outfall list the estimated level of production (projected actual production not design), expressed in the terms and units used in the applicable guideline or new source performance standard, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates on a separate sheet.

Year	Quantity Per Day	Units of Measure	Operation, Product, Material, etc (specify)

3. Wastewater Treatment

Briefly describe any planned treatment for wastewaters prior to discharge. List the outfall to which the treatment applies and the individual treatment units. If there is any technical evaluation concerning your proposed wastewater treatment, including pilot plant studies, list the title and date of the report and state whether a copy has been submitted for review.

4. Other Facilities

Provide the name and location of any existing plant (s) which, to the best of your knowledge, resemble this production facility with respect to production processes, wastewater constituents, or wastewater treatment systems.

NAME	LOCATION

Facility Name:	

5. Effluent Characteristics

A and B: These items require you to report estimated amounts (both concentration and mass) of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instructions for that part. Data for each outfall should be on a separate page. You may photocopy this page or attach additional sheets of paper as necessary.

General Instructions (See Table A for pollutants)

Each part of this item requests that you provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by the department. For all outfalls, data for pollutants in Group B must be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or a new source performance standard (NSPS) or indirectly through limitations on an indicator pollutant.

Pollutant	Outfall No.	Maximum Daily Value *(include units)*	Average Daily Value *(include units)*	Source	Certified Laboratory Number

Facility Name:	

5.C. Use the space below to list any of the pollutants listed in Table B of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

POLLUTANT	REASON FOR DISCHARGE

6. Chemical Additives - If you add any chemicals (e.g. microbiocides, cooling water or boiler chemicals) you must provide the following information:

(1) The name of the manufacturer of each chemical used and list their composition or provide a copy of each Material Safety Data Sheet (MSDS).

(2) The concentration of the chemical additive estimated to be discharged in ppm or mg/l.

(3) The ecological toxicity information about the chemical if available. Specifically, the LC50 value for freshwater aquatic species which may be listed on the MSDS.

Attach additional sheets if necessary.

7. Other Information

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

DO NOT SUBMIT THESE PAGES – FOR APPLICANT USE ONLY
FORM 4 – INSTRUCTIONS
FACILITIES THAT DISCHARGE PROCESS WASTEWATER - NEW SOURCES OR NEW DISCHARGES

Follow-up Requirements

Although you are not required to submit estimated data on this form, please note that no later than two years after you begin discharging from the proposed facility, you must complete and submit Item V of application Form 3. However, you need not complete those portions of item V requiring tests which you have already performed under the discharge monitoring requirements of your NPDES permit. In addition, the permitting authority may waive requirements of Form 3 - Item V if the permittee makes the demonstrations required under 40 CFR §122.22(g)(7)(I)(6) and 122.21(g)(9).

Item 1

List all outfalls, operations contributing to the flow, and estimate an average and maximum flow from each source. Also, list the stream which receives the discharge from each outfall.

Item 2

"Production" in this question refers to those goods which the proposed facility will produce, not to "wastewater" production. This information is only necessary where production-based new source performance standards (NSPS) or effluent guidelines apply to your facility. Your estimated production figures should be based on a realistic projection of actual daily production level (not design capacity) for each of the first three operating years of the facility. This estimate must be a long-term-average estimate (e.g., average production on an annual basis). If production will vary depending on long-term shifts in operating schedule or capacity, the application may include alternate production estimates and the basis for the alternate estimates.

Report quantities in the units of measurement used in the applicable NSPS or effluent guideline. For example, if the applicable NSPS is expressed as "grams of pollutant discharged per kilogram of unit production," then report maximum "Quantity Per Day" in kilograms. If you do not know whether any NSPS or effluent guideline applies to your facility, report quantities in any unit of measurement known to you. If an effluent guideline or a NSPS specifies a method for estimating production, that method must be followed.

There is no need to conduct studies to obtain these figures; only data already on hand are required. You are not required to indicate how the reported information is calculated.

Item 3

For each outfall, briefly describe any planned treatment of wastewaters prior to discharge or provide a reference to a previously submitted engineering report. Also, describe the ultimate disposal of any solid or liquid wastes not discharged.

Item 4

Report the name and location of any existing plant(s) which (to the best of your knowledge) resembles your planned operation with respect to items produced, production process, wastewater constituents, or wastewater treatment. No studies need to be conducted to respond to this item. Only data which are already available need be submitted. This information will be used to inform the permit writer of appropriate treatment methods and their associated permit conditions and limits.

Items 5A, B, and C

These items require you to estimate and report data on the pollutants expected to be discharged from each of your outfalls. Where there is more than one outfall, you should submit a separate Item 5 for each outfall. For Part C only a list is required. Sampling and analysis are not required at this time. If, however, data from such analyses are available, then those data should be reported. Each part of this item addresses a different set of pollutants or parameters and must be completed in accordance with the specific instructions for that part. The following are the general and specific instructions for Items 5A through 5C.

Item 5 - General Instructions

Each part of this item requires you to provide an estimated maximum daily and average daily value for each pollutant or parameter listed (see Table A), according to the specific instructions below. The source of each estimate is also required.

For Parts A through C, base your determination of whether a pollutant will be present in your discharge on your knowledge of the proposed facility's raw materials, maintenance chemicals, intermediate and final products, byproducts, and any analyses of your effluent or of any similar effluent. You may also provide the determination and the estimates based on available in-house or contractor's engineering reports or any other studies performed on the proposed facility (see Item 4 of the form). If you expect a pollutant to be present solely as a result of its presence in your intake water, please state this information on the form.

Please note that no later than 2 years after you begin discharging from the proposed facility, you must complete and submit ltems V-A through V-C of Form 3.

Reporting Intake Data. You are not required to report pollutants or parameters present in intake water unless you wish to demonstrate your eligibility for a "net" effluent limitation for these pollutants or parameters, that is, an effluent limitation adjusted to provide allowance for the pollutant or parameters present in your intake water. If you wish to obtain credits for pollutants or parameters present in your intake water, please insert a separate sheet, with a short statement of why you believe you are eligible, under Item 6 (Other Information) {see §122.45(g)}.

All estimated pollutant or parameter levels must be reported as concentration and total mass, except for discharge flow, temperature, and pH. Total mass is the total weight of pollutants or parameters discharged over a day. Use the following abbreviations for units:

Concentration	Mass
ppm..... parts per million	lbs..... pounds
mg/l..... milligrams per liter	ton..... tons (English tons)
ppb..... micrograms per liter	mg..... milligrams
µg/l..... parts per billion	g..... grams
kg..... kilograms	T..... Tonnes (metric tons)

Source

In providing the estimates, use the codes in the following table to indicate the source of such information in column 5 of Parts 5A and B.

	Code
Engineering study	1
Actual data from pilot plants	2
Estimates from other engineering studies	3
Date from other similar plants	4
Best professional estimates	5
Others	specify on the form

Item 5 - Specific Instructions

Item 5A

Estimates of data on pollutants or parameters in Group A must be reported by all applicants for all outfalls, including outfalls containing only noncontact cooling water or nonprocess wastewater. To request a wavier from reporting any of these pollutants or parameters, the applicant must submit to the permitting authority a written request specifying which pollutants or parameters should be waived and the reasons for requesting such a waiver. This request should be submitted to the permitting authority before or with the permit application. The permitting authority may waive the requirements for information about these pollutants or parameters if he or she determines that less stringent reporting requirements are adequate to support issuance of the permit. Extensive documentation will not normally be needed, but the applicant should contact the permitting authority if she or he wishes to receive instructions on what his or her particular request should contain.

Item 5B

Estimates of data on pollutants in Group B must be reported by all applicants for all outfalls, including outfalls containing only noncontact cooling water or nonprocess wastewater. You are merely required to report estimates for those pollutants which you know or have reason to believe will be discharged or which are limited directly by an effluent limitations guideline (or NSPS) or indirectly through promulgated limitations on an indicator pollutant. The priority pollutants in Group B are divided into the following three sections:

1) Metal toxic pollutants, total cyanide, and total phenols

2) 2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD) (CAS #764-016)

3) Organic Toxic Pollutants (Gas Chromatography/Mass Spectrometry Fractions)
   a) Volatile compounds
   b) Acid compounds
   c) Base/neutral compounds
   d) Pesticides

For pollutants listed in Sections 1 and 3, you must report estimates as instructed above.

For Section 2, you are required to report that TCDD may be discharged if you will use or manufacture one of the following compounds, or if you know or have reason to believe that TCDD is or may be present in an effluent:

A. 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) (CAS # 93-765);
B. 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5TP) (CAS # 93-72-1);
C. 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) (CAS # 136-25-4);
D. 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnell) (CAS # 299-84-3);
E. 2,4,5-trichlorophenol (TCP) (CAS #95-95-5;
F. Hexachlorophene (HCP) (CAS # 70-30-4).

Small Business Exemption

If you are a "small business," you are exempt from the reporting requirements for the organic toxic pollutants listed in Table A. There are two ways in which you can qualify as a "small business":

i. If your facility is a coal mine, and if your probable total annual production is less than 100,000 tons per year, you may submit past production data or estimated future production (such as a schedule of estimated total production under 30 CFR 795.14(c)) instead of conducting analyses for the organic toxic pollutants.

ii. If your facility is not a coal mine, and if your gross total annual sales for the most recent three years average less than $100,000 per year (in second quarter 1980 dollars), you may submit sales data for those years instead of conducting analyses for the organic toxic pollutants.

The production or sales data must be for the facility which is the source of the discharge. The data should not be limited to production or sales for the process or processes which contribute to the discharge, unless those are the only processes at your facility. For sales data, in situations involving intracorporate transfer of goods and services, the transfer price per unit should approximate market prices for those goods and services as closely as possible. Sales figures for years after 1980 should be indexed to the second quarter of 1980 by using the gross national product price deflator (second quarter of 1980=100). This index is available in National Income and Product Accounts of the United States (Department of Commerce, Bureau of Economic Analysis)

Item 5C

List any pollutants in Table B that you believe will be present in any outfalls and briefly explain why you believe they will be present. No estimate of the pollutant's quantity is required, unless you already have quantitative data.

Item 6

Self explanatory.

Item 7

Self explanatory.

TABLE A

GROUP A

1. Biochemical Oxygen Demand (BOD)
2. Chemical Oxygen Demand (COD)
3. Total Organic Carbon (TOC)
4. Total Suspended Solids (TSS)
5. Flow
6. Ammonia (as N)
7. Temperature (winter)
8. Temperature (summer)
9. pH

GROUP B

1. Bromide
2. Total Residual Chlorine
3. Color
4. *Escherichia coli* (E. coli)
5. Fluoride
6. Nitrate-Nitrite (as N)
7. Oil and Grease
8. Phosphorus (as P) Total
9. Radioactivity
   - (1) Alpha, Total
   - (2) Beta, Total
   - (3) Radium Total
   - (4) Radium 226, Total
10. Sulfate (as $S0_4$)
11. Sulfide (as S)
12. Sulfite (as SO_3)
13. Surfactants
14. Aluminum, Total
15. Barium, Total
16. Boron, Total
17. Cobalt, Total
18. Iron, Total
19. Magnesium, Total
20. Molybdenum, Total
21. Manganeses, Total
22. Tin, Total
23. Titanium, Total

SECTION 1

1M Antimony, Total
2M Arsenic, Total
3M Beryllium, Total
4M Cadmium, Total
5M Chromium, Total
6M Copper, Total
7M Lead, Total
8M Mercury, Total
9M Nickel, Total
10M Selenium, Total
11M Silver, Total
12M Thallium, Total
13M Zinc, Total
14M Cyanide, Total
15M Phenols, Total

SECTION 2

2,3,7,B,Tetrachlorodibenzo-P-Dioxin

SECTION 3

GC/MS FRACTION - - VOLATILE COMPOUNDS

1V Acrolein
2V Acrylonitrile
3V Benzene
4V Bromoform
5V Carbon Tetrachloride
6V Chlorobenzene
7V Chlorodibromomethane
8V Chloroethane
9V 2-Chloroethylvinyl Ether
10V Chloroforrn
11V Dichlorobornomethane
12V 1,1-Dichloroethane
13V 1,2-Dichloroethane
14V 1,2-Dichlorapropane
15V 1,3-Dichloropropylene
16V Ethylbenzene
17V Methyl Bromide
18V Methyl Chloride
19V Methylene chloroethane
20V 1,1,2,2-Tetrachloroethane
21V Tetrachloroethylene
22V Toluene
23V 1,2-Trans-Dichloroethylene
24V 1,1,1-Trichloroethane
25V 1,1,2-Trichloroethane
26V Trichloroethylene
27V Vinyl Chloride

TABLE A (continued)

GS/MS FRACTION – ACID COMPOUNDS

1A 2-Chlorophenol
2A 2,4-Dichlorophenol
3A 2,4-Dimethylphenol
4A 4,6-DiniTro-O-Cresol
5A 2,4-Dinitro-phenol
6A 2-Nitrophenol
7A 4-Nitrophenol
8A P-Chloro-M-Cresol
9A Pentachlorophenol
10A Phenol
11A 2,4,6-Trichlorophenol

GC/M FRACTION – BASE/NEUTRAL COMPOUNDS

1B Acenaphthene
2B Acenaphthylene
3B Anthracene
4B Benzidine
5B Benzo (a) Anthracene
6B Benzo (a) Pyrene
7B 3,4-Benzofluoranthene
8B Benzo (k) Fluoranthene
9B Benzo (ghi) Perylene
10B Bis (2 Chloroethoxy) Rethane
11B Bis (2-Chloroethyl) Ether
12B Bis (2-Chloroisopropyl) Ether
13B Bis (2-Ethylhexyl) Phthalate
14B 4-Bromophenyl Phenyl Ether
15B Butyl Benzyl Phthalate
16B 2-Chloronaphthalene
17B 4-Chlorophenyl Phenyl Ether
18B Chrysene
19B Dibenzo (a,h) Anthracene
20B 1,2-Dichlorobenzene
21B 1,3-Dichlorobenzene
22B 1,4-Dichlorobenzene
23B 3,3-Dichlorbenzidine
24B Diethyl Phthalate
25B Dimethyl Phthalate
26B Di-N-Butyl Phthalate
278 2,4-Dinitrotoluene
28B 2,6-Dinitrotoluene
29B Di-N-Octyl Phthalate
30B 1,2,Diphenylhydrazine (as Azobenzen)
31B Fluoranthene
32B Fluorene
33B Hexachlorobenzene
34B Hexachlorobutadiene
35B Hexachlorocyclopentadiene
36B Hexachloroethane
37B Indeno (1,2,3-cd) Pyrene
38B Isophorone
39B Naphthalene
40B Nitrobenzene
41B N-Nitro-sodimethylamine
42B N-Nitrosodi-N-Propylamine
43B N-Nitro-sodiphenylamine
44B Phenathrene
458 Pyrene
46B 1,2,4-Trichlorobenzene

GC/MS FRACTION – PESTICIDES

1P Aldrin
2P Alpha-BHC
3P Beta-BHC
4P Gamma-BHC
5P Delta-BHC
6P Chlordane
7P 4,4'DDT
8P 4,4'DDE
9P 4,4'-DDD
10P Dieldrin
11P Alpha-Endosulfan
12P Beta-Endosulfan
13P Endosulfan Sulfate
14P Endrin
1SP Endrin Aldehyde
16P Heptachlor
17P Heptachlor Expoxide
18P PCB-1242
19P PCB-1254
20P PCS-1221
21P PCB-1232
22P PCB-1248
23P PCB-1260
24P PCB-1016
25P Toxaphene

*fractions defined in 40 CFR Part 136

TABLE B

TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES
REQUIRED TO BE IDENTIFIED BY APPLICANTS IF EXPECTED
TO BE PRESENT

TOXIC POLLUTANT

Asbestos

HAZARDOUS SUBSTANCES

1. Acetaldehyde
2. Allyl alcohol
3. Allyl chloride
4. Amyl acetate
5. Aniline
6. Benzonitrile
7. Benzyl chloride
8. Butyl acetate
9. Butylamine
10. Captan
11. Carbaryl
12. Carbofuran
13. Carbon disulfide
14. Chlorpyrifos
15. Coumpahos
16. Cresol
17. Crotonaldehyde
18. Cyclohexane
19. 2,4-D (2,4-Dichlorophinoxylacetic acid)
20. Diazinon
21. Dicamba
22. Dichlobenil
23. Dichlone
24. 2,2 Dichloropropionic acid
25. Dichlorvos
26. Diethyl amine
27. Dimethyl amine
28. Dinitrobenzene
29. Diquat
30. Disulfoton
31. Diuron
32. Epichlorohydrin
33. Ethion
34. Ethylene diamine
35. Formaldehyde
36. Furfural
37. Guthion
38. Isoprene
39. Isopropanolamine dodecylbenxenesulfonate
40. Kelthane
41. Kepone
42. Malathion
43. Mercaptodimethur
44. Methoxychlor
45. Methyl mercaptan
46. Methyl methacrylate
47. Methyl parathion
48. Mevinphos
49. Mexacarbate
50. Monoethyl amine
51. Monomethyl amine
52. Naled
53. Naphthenic acid
54. Nitrotoluene
55. Parathion
56. Phenolsulfonate
57. Phosgene
58. Propargite
59. Propylene oxide
60. Pyrethrins
61. Quinoline
62. Resorcinol
63. Strontium
64. Strychnine
65. 2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)
66. TDE (Tetrachlorodiphenyl ethane)
67. 2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanic acid]
68. Trichlorofon
69. Triethanolamine dodecylbenzenesulfonate
70. Triethylamine
71. Uranium
72. Vanadium
73. Vinyl acetate
74. Xylene
75. Xylenol
76. Zirconium